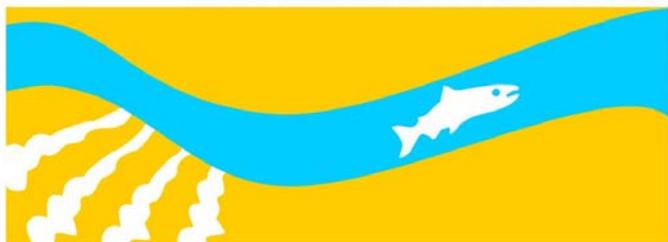


## Attachment 4

# Groundwater Modeling Output – Schmidt Method

## Modeling

**SAN JOAQUIN RIVER**  
RESTORATION PROGRAM





**Table 1.**  
**Depth to Groundwater, Long-Term Average for No-Action Alternative and Proposed Action**

Month	Average of All Years (feet)		
	No-Action Alternative	Proposed Action)	Change from No-Action
			Proposed Action
Exeter Irrigation District	75.6	76.3	-0.74 (-0.98%)
Ivanhoe Irrigation District	85.9	86.2	-0.33 (-0.38%)
Lindmore Irrigation District	71.0	72.1	-1.10 (-1.54%)
Lindsay-Strathmore Irrigation District	59.7	60.1	-0.36 (-0.60%)
Orange Cove Irrigation District	44.5	47.2	-2.73 (-6.13%)
Tulare Irrigation District	152.9	154.0	-1.09 (-0.71%)
Lower Tule River Irrigation District	167.9	168.8	-0.88 (-0.52%)
Porterville Irrigation District	60.5	61.7	-1.16 (-1.92%)
Saucelito Irrigation District	176.3	177.4	-1.08 (-0.61%)
Delano-Earlimart Irrigation District	180.5	181.7	-1.24 (-0.69%)
Shafter-Wasco Irrigation District	328.1	328.9	-0.82 (-0.25%)
Southern San Joaquin Municipal Utility District	177.7	177.8	-0.11 (-0.06%)
Arvin Edison Water Storage District	410.0	412.8	-2.75 (-0.67%)
Chowchilla Water District	153.8	154.6	-0.83 (-0.54%)
Madera Irrigation District	153.8	154.0	-0.21 (-0.14%)

*Schmidt Method Calculations*

Notes:

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

**Table 2.  
Groundwater Pumping, Long-Term Average for No-Action Alternative and  
Proposed Action**

Month	Average of All Years (acre-feet)		
	No-Action Alternative	Proposed Action	Change from No-Action
			Proposed Action
Exeter Irrigation District	20,000	20,908	908 (4.54%)
Ivanhoe Irrigation District	16,000	16,476	476 (2.98%)
Lindmore Irrigation District	34,000	34,049	49 (0.14%)
Lindsay-Strathmore Irrigation District	7,000	7,929	929 (13.26%)
Orange Cove Irrigation District	41,000	42,324	1,324 (3.23%)
Tulare Irrigation District	137,000	141,873	4,873 (3.56%)
Lower Tule River Irrigation District	134,000	142,284	8,284 (6.18%)
Porterville Irrigation District	23,000	24,323	1,323 (5.75%)
Saucelito Irrigation District	15,000	16,572	1,572 (10.48%)
Delano-Earlimart Irrigation District	26,000	30,438	4,438 (17.07%)
Shafter-Wasco Irrigation District	55,000	57,146	2,146 (3.90%)
Southern San Joaquin Municipal Utility District	49,000	52,630	3,630 (7.41%)
Arvin Edison Water Storage District	186,000	196,035	10,035 (5.40%)
Chowchilla Water District	93,000	98,647	5,647 (6.07%)
Madera Irrigation District	153,000	160,390	7,390 (4.83%)

*Schmidt Method Calculations*

Notes:

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

## Attachment 5

# Air Quality Modeling Output – URBEMIS

## Modeling





Detail Report for Annual Construction Unmitigated Emissions (Tons/Year)

File Name: C:\Documents and Settings\weirichj\Desktop\SJ River Restoration 07110191.01\EA\_IS\SJRR EA IS.urb924

Project Name: SJRR EA IS

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10 Total</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5 Total</u>	<u>CO2</u>
2011	0.16	1.13	0.82	0.00	0.33	0.09	0.42	0.07	0.09	0.15	132.03
Fine Grading 09/01/2011-11/30/2011	0.16	1.13	0.82	0.00	0.33	0.09	0.42	0.07	0.09	0.15	132.03
Fine Grading Dust	0.00	0.00	0.00	0.00	0.33	0.00	0.33	0.07	0.00	0.07	0.00
Fine Grading Off Road Diesel	0.15	0.95	0.65	0.00	0.00	0.09	0.09	0.00	0.08	0.08	93.12
Fine Grading On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	26.17
Fine Grading Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.74

Phase Assumptions

Phase: Fine Grading 9/1/2011 - 11/30/2011 - Invasive Vegetation Removal  
 Total Acres Disturbed: 660  
 Maximum Daily Acreage Disturbed: 1  
 Fugitive Dust Level of Detail: Default  
 10 lbs per acre-day  
 On Road Truck Travel (VMT): 200  
 Off-Road Equipment:  
 10 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Urbemis 2007 Version 9.2.4

Detail Report for Annual Operational Unmitigated Emissions (Tons/Year)

File Name: C:\Documents and Settings\weirichj\Desktop\SJ River Restoration 07110191.01\EA\_IS\SJRR EA IS.urb924

Project Name: SJRR EA IS

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

<u>Source</u>	ROG	NOX	CO	SO2	PM10	PM25	CO2
Restoration Area	0.00	0.01	0.04	0.00	0.00	0.00	3.71
TOTALS (tons/year, unmitigated)	0.00	0.01	0.04	0.00	0.00	0.00	3.71

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Restoration Area		1.00	acres	1.00	1.00	19.89
					1.00	19.89

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	42.4	1.2	98.6	0.2

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck < 3750 lbs	12.1	2.5	90.9	6.6
Light Truck 3751-5750 lbs	21.1	0.9	98.6	0.5
Med Truck 5751-8500 lbs	11.9	0.8	99.2	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.4	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	1.3	7.7	15.4	76.9
Heavy-Heavy Truck 33,001-60,000 lbs	2.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.9	64.1	35.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	20.0	20.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Restoration Area				2.0	1.0	97.0

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

Commercial-based non-work rural trip length changed from 6.6 miles to 20 miles

Commercial-based customer rural trip length changed from 6.6 miles to 20 miles